FACTORS AFFECTING COST OVERRUN AT CONSTRUCTION PROJECTS IN SOMALIA

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DEDICATION

I dedicate this thesis to my family and friends who have supported me throughout the process.

I also dedicate this work and give special thanks to my supervisor, Assoc. Prof. Dr. Seow Ta Wee for his precious guidance and advice.

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ABSTRACT

The construction industry plays an influential role in the socio-economy of a country. In Somalia, the construction industry is one of the essential industries participating significantly in the growth of socio-economic development. Somalia is facing a significant issue of cost overrun in construction projects. The issue of cost overrun has become a serious concern to investors, which needs serious attention and in-depth research to put forward solutions to this issue. The objectives of this research are (1) To identify factors causing cost overrun in construction projects, (2) To study a strategy to overcome cost overrun in construction projects. The research was taking place in Somalia. And it is based on quantitative research by using questionnaire to carry out the research. The questionnaire was designed based on the objectives. A total of 51 questionnaires were gathered from a total of 100 Grade A contractors in Somalia. The analysis of the data was used by using SPSS software. The variables of this research were ranked based on their mean; the study proves that the contractors are facing cost overrun problems specifically the factors used in the questionnaire. Furthermore, majority of the respondents strongly agreed to the strategies provided by the study to overcome cost overrun and keep the construction projects within budget. This finding contributes to the contractor's development and could be referenced by contractors who want to increase their chance of overcoming cost overruns in construction projects.

ABSTRAK

Industri pembinaan memainkan peranan yang berpengaruh dalam sosioekonomi sesebuah negara. Di Somalia, industri pembinaan merupakan salah satu industri penting yang terlibat dengan ketara dalam pertumbuhan pembangunan sosio-ekonomi. Somalia menghadapi masalah besar dalam menelan kos dalam projek pembinaan. Isu overrun kos telah menjadi perhatian serius kepada pelabur, yang memerlukan perhatian serius dan penyelidikan mendalam untuk mengemukakan penyelesaian kepada isu ini. Objektif kajian ini adalah (1) untuk mengenal pasti faktor-faktor yang menyebabkan kos ditanggung oleh projek-projek pembinaan, (2) mengkaji strategi untuk mengatasi kos yang melampaui projek pembinaan. Penyelidikan sedang berlaku di Somalia. Dan ia berdasarkan penyelidikan kuantitatif dengan menggunakan soal selidik untuk menjalankan penyelidikan. Soal selidik itu direka berdasarkan objektifnya. Sebanyak 51 soal selidik telah dikumpulkan dari sejumlah 100 kontraktor Gred A di Somalia. Analisis data digunakan dengan menggunakan perisian SPSS. Pembolehubah kajian ini didasarkan pada purata min; kajian ini membuktikan bahawa kontraktor menghadapi masalah menelan belanja kos khususnya faktor yang digunakan dalam soal selidik. Tambahan pula, majoriti responden sangat bersetuju dengan strategi yang disediakan oleh kajian ini untuk mengatasi kos yang melampau dan mengekalkan projek pembinaan dalam anggaran. Dapatan ini menyumbang kepada pembangunan kontraktor dan boleh dirujuk oleh kontraktor yang ingin meningkatkan peluang mereka untuk mengatasi overruns kos dalam projek pembinaan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBEREVIATION

CM -	Construction Manager
MARA –	Majlis Amanah Rakyat
PMBOK –	Project Management Body of Knowledge
PMI –	Project Management Institute
PMO –	Project Manager Office
PM –	Project Manager
UK –	United Kingdom
SPSS -	Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Introduction

Somali construction industries suffer excessive cost overruns on major projects. This leads the need of effective cost management system and cost control system. To reduce this problem, the important steps are to identify and understand the causes and factors responsible for this. Hence, the purpose of this study is to identify and to come up a strategy to deal the main sources affecting construction cost. In many large projects, construction management consultants play a critical role in estimating construction costs, scheduling construction activities, and implementing various techniques to complete the projects within budget but cost overrun is a long-lasting worldwide problem and is worsening (Ahmed et al., 2002).

As in the developing country, the construction industry is continuously growing, so the planning and budgeting problem in construction project definitely will happen. It is a common problem of a project not to be completed within the budget (Apolot et al., 2013). The construction industry is crucial since economic development has increased the requirement for construction of infrastructure and aperient around the world. The construction manufactures also supply the basic living conditions for the sustainability and development of human life on the earth. To cope with an ever-increasing population, pressure on land, and growing economic activity, construction projects are in increasing demand and activities are booming in much countries (Zhang, & Wu, 2014) . the cost overruns are a risky and crucial problem. They also state that the problems of cost overruns become a trend in the worldwide and it is more happened in developing countries Angelo & Reina et al., (2005).

Cost overruns are usually encountered due to an overlook of potential risk. Insufficient information and ineffective management of project caused project cost overrun, and impact the project team's reputation. To improve the chance of success and reduce the potential failures, the success criteria, and uncertain factors should be carefully identified, assessed and monitored (Kuo & Lu, 2013).

Cost overruns have been known in the past several decades in large construction projects (Pickrell 1990; Flyvberg Holm & Buhl, 2003). Many factors are responsible for these cost overruns such as underestimation of costs to make the projects more viable, addition of scope during later stages of project planning and even during construction, changed conditions, etc. One of the most important contributing factors to the magnitude of cost overrun in large transportation projects are project delays. Furthermore, the length of project development phase from planning to construction seems to be a major factor in the extent of cost overrun (Flyvbjerg, Holm & Buhl, 2004). The longer, larger projects tend to be more prone to cost overruns (Touran and Lopez, 2006).

Cos overruns are frequent phenomena and are almost associated with nearly all projects in the construction industry (Kaming et al., 1997; Abd El– Razek et al., 2008; Le Hoai et al., 2008). Cost overruns can be defined as when the project objectives have not been achieved within the estimated budget (Dlakwa and Culpin, 1990). The construction industry contributes to the socio-economic growth of any nation by improving the quality of life and providing infrastructures such as roads, hospitals, schools, and other basic facilities. Hence, it is imperative that construction projects be completed within the scheduled time, within the budgeted cost, and meet the anticipated quality. However, being a complex industry, it is faced with severe problems of cost overruns (Abdul-Rahman, Memon & Abd Karim, 2013).

Recent Somali construction problems highlights the fact that Somali contractors need to improve their ability to deal with project cost control and to develop the skills to minimize cost overruns. This fundamental change is required to bring Somali practices in line with internationally accepted practice.

1.2 Research Background

Cost overrun projects are a common news story in the media, in Somalia and around the world. International evidence suggests that the bigger the project, the more likely it will go over budget and. Kaming et al. (1997) showed that cost overruns were attributed to inaccurate material estimation, material cost increases and lack of experience of project type. A very comprehensive research done by Flyvbjerg and Holm (2002) state that 9 out 10 public construction projects in Chicago has overrun in the cost and schedule. In 2006, Standish study report shows around 46% of the project, either had cost overruns or it did not meet the requirement or needs of the customer (Rubenstein, 2007). Nowadays, construction industry are facing chronic problems, such as cost overruns, poor workers performance, over dependent on workers from foreign countries and lack of resource (Rahman et al., 2012).

Cost is a prime factor to measure the project success, especially for the construction projects in the developing country, because construction projects in the developing countries are perform under insufficient resources, always faced problems of shortage materials (Nega, 2008). Generally, a project is considered successful if the project is finished within a stated cost. Generally, most of the construction projects experienced cost overrun during their execution phase. Cost overrun will increase the amount money need use to construct a project over and above the original budgeted amount (Apolot et al., 2013), and it will delay the project status due to project manager and contractors need to find the funds for the following execution work.

This study will focus on the cost overrun problems observed in Somalia construction projects, the aim is to apply the lessons gained from this research of an important period in the development of Somalia construction industry and to apply these lessons to future construction.

1.3 Problem Statement

Most projects in Somalia are exceeding the original budget limit, the goal in any construction industry is to achieve the completion of project within time and stipulated budget. It is the same with construction industry. The construction industry being one of the most complex, fragmented, schedule and resource driven industry, is always facing serious problems like cost overrun.

Cost overrun in construction is a worldwide phenomenon, and its effects are normally a source of friction between owners, project managers, and contractors (Creedy et al., 2010). Azhar and Farouqui (2008) observed that the trend of is more severe in developing countries. As the construction industry continues to grow in size, so do planning and budgeting problems. The statements above can be concluded that cost overrun issue can directly lead a project to failure if not solve it, it will bring unanticipated and unexpected impact to the company as well as the construction industry (Mohamad, 2010). Therefore, project managers and site contractors need to pay serious attention to alleviate it (Rahman et al., 2013).

This study is focused on identifying factors and key components of cost overruns and to study a strategy to overcome cost overruns in the construction industries in Somalia. Hence, it can help contractors and project managers to understand the importance of cost in a project, and to reduce the financial related issues in order to make the project successful.

1.4 Research Questions

Identifying factors affecting cost overrun at construction projects in Somalia is the target of this research. In order to achieve study objectives, the following research questions are formulated:

1. What are the cost overrun factors in construction projects?
2. What are the strategies to overcome the cost overrun construction projects?

1.5 Research Objectives

This study is aimed to achieve two objectives:

1. To identify cost overrun factors in construction projects.
2. To study a strategy to overcome cost overrun in construction projects.

1.6 Scope of Study

This research studied on identifying the factors that are causing cost overrun of construction projects in Somalia and how to overcome it. the factors that are causing cost overrun and the strategy to overcome it was identified through the literature study. Next, the study will be carried out by way of data collection from the questionnaires which will distribute to respondents who are Grade A contractors registered with Ministry of Public works & Reconstruction in Somalia. These companies are selected because they can deal with such projects, and has unlimited target in terms of financing a project. This research will be carried out using online questionnaire survey and the target respondents was focus on the contractor companies in Somalia.

1.7 Significance of the Study

It is conclusive to control cost overrun of construction projects in term of achieve a completion successfully. However, nowadays, the construction industry is facing a big risk in achieving a success completion of the project within specified cost, which there are a various factor causes those risks.

This study enlightened and inspired contractors about the cost overrun factors and produce the guideline or reference to the contractors, to let them understand well how important the impact of the cost overrun factor. So, the findings of this study was beneficial to contractors during conduct construction project.

1.8 Thesis Structure

The research encompasses five (5) main chapters, namely; Introduction, literature review, research methodology, data analysis and discussion, then conclusion and recommendations. Details and explanation to every chapter will be discussed below:

Chapter 1: Introduction

The chapter focuses on introduction of the research topic. It encompasses the research background, the research problem, research questions, Objectives of the research, significance of research, scope of the study, Research Methodology and Thesis Structure

Chapter 2: Literature Review

The chapter discusses the relevant literature review extensively from previous writing researches in line with the scope such, cost overrun in construction projects, and factors causing cost overrun in construction projects and the impact of cost overrun in construction projects.

Chapter 3: Research Methodology

The chapter will pay attention to the research approach and strategies, and research methodology that will be employed in carrying out the research. This encompasses the research process and design, population and sampling techniques to be used. The method used in data collection and analysis of data.

Chapter 4: Data Analysis and Discussion

Data obtained, presented and analyzed in this chapter. The result of the survey findings and results of the analysis were discussed in the same chapter. Finally, it also includes the discussion about the result obtained during analysis and formed the basis of recommendations.

Chapter 5: Conclusion and Recommendation

The chapter presents conclusion and recommendations which were driven by the data analysis and discussion of the findings obtained. The chapter summarizes the entire research work to be conducted where conclusion would be made. The recommendation is given based on the research subject matter for possible action to be taken. Moreover, it ends with highlighting the limitations in the research and conclusion remarks.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the previous relevant literatures were reviewed. It presented the several definitions of cost overrun factors to get a broad indication of the different aspects of this definition. This chapter plays a very important role to the first objective, which is identifying the cost overruns factors in construction projects. Next, it will generally discuss a review of project cost overrun, which was discussed by researchers in the last few years.

The purpose of this literature review is to understand cost overrun factors and to come up with a strategy to overcome the issue. For this reason, this section was reviewed the results of different studies related to the cost overruns in the construction project by previous researchers.

2.2 Cost Overrun Definition

Cost overrun can be defined as an extra cost beyond the contractual cost agreed during the tender. Many previous studies have identified cost overruns as general problems in the construction industry worldwide (Endut *et al.,* 2005). According to Enshassi *et al*. (2010) cost overrun can be defined as excess of actual cost over specified budget. Cost overrun is also sometimes called “cost escalation”, or “budget overrun”. More than that, cost performance is the most significant indicator of project success. It presents not only the firm's profitability but also the productivity of organizations at any point during the

construction processes. It can be seen in the project account and always used to measure project performance (Rahman et al., 2013).

In the construction project, cost overrun factors may come from various factors, for example, lack of experience of contractor, frequently changes the structure of the design, inflation of materials, improper budget planning, fluctuation in prices of materials, weather condition, poor project management and supervision. Cost overrun occurs when the final cost of the project exceeds the original contract value at the time of completion (Danso & Antwi, 2012).

2.3 Existing Studies of Cost Overrun Factors

Many literatures and actual projects indicate that construction cost overrun is a common problem in the construction field. Costs overrun is an occurrence in which the provision of contracted projects, service or goods are claimed to require extra financial resources than initially agreed between a project owner and a contractor. Cost overrun is defined as an increase of cost, which is not expected (i.e. excess of a budgeted cost) during estimation of the initial budget (Enshassi *et al., 2*010).

Many Countries around the worldwide are facing many problems on cost performance such as Malaysia, Gaza, Nigeria, Pakistan, Egypt, Greek and India. Cost overrun on a construction projects is one of the major issues which describes inability to complete the project within the limited or specified cost (Rahman *et al.,* 2013). Cost overrun is also known as cost escalation where actual cost exceeds the approved cost or original budget for construction of the project. Uncontrolled cost overrun may lead to the increase in construction cost and effect the decision-making for investment. National finance will be wasted which might result in corruption or offense (Ali & Kamaruzzaman, 2010). Cost is amongst the major considerations throughout a project management life cycle and is considered as prime factor of success. However, it is uncommon to see project completed within the estimated cost. In today's construction industry, cost overrun is very common phenomenon worldwide. This problem/issue is critical and needs to be more understood and alleviated. In a study on 8000 projects, found that only 16% of the projects satisfied the three fundamental criteria of project success i.e. completing project on time,

meeting the budgeted cost, and meeting quality standard, while in a global study on cost overrun issue in transport infrastructure projects covering 258 projects in 20 nation concluded that 9 out 10 projects faced cost overrun. Construction projects in Pakistan found that a minimum cost overrun recorded was 10% of the estimated cost. Furthermore, the authors mentioned that this trend is sometimes more severe in developing countries where cost overrun sometimes exceeds 100% of the anticipated cost of the project. In Uganda, there was cost overrun of more than 100% of the contract price in the Northern-by-pass project. In Nigeria, the minimum average percentage of cost escalation was 14%. In Portugal, construction projects faced a minimum of 12% of cost overrun (Memon *et al.*, 2012).

Cost overrun is the amount by which actual costs exceed the baseline or approved costs. The difference between the original cost and the actual cost when the project is completed is cost overruns. For the purpose of this research, cost overrun is defined as the difference between the final or actual cost of a construction project at completion and the contract amount agreed by the client (the project owner) and the contractor during signing of the contract. The percentage of cost overrun for a project is defined as the ratio of the cost overrun and the initially projected cost of the project multiplied by one hundred. Again, percentage cost overrun can be positive, zero or negative. More than that, some research defined the cost overruns as the difference between the original cost estimate of project and actual construction cost on completion of works of tower construction project (Danso & Antwi, 2012). In the year 2009, a team of researcher found that the factors causing cost overrun in the construction project located in the Gaza were caused by increment of materials‟ prices due to continuous border closure, fluctuations in the price of building materials, project materials monopoly by suppliers, contractors lack of planning, poor project management, and design error (Al-Nijjar, 2008).

In the 2010, from a research finding, found that among 42 cost overruns factors, mentioned that the lack of experience of contractors, cost of materials, fluctuations in the price materials, design changes and error, improper planning and poor management are the common factors make the project cost increase (Ameh et al., 2010). In the same year, inadequate quality system was bringing impact to the project‟s profit (He, 2010), such as poor quality.

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